LICKSON®

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TECHNICAL SHEET

Fluid THIOGLYCOLLATE MEDIUM (USP) (ISO 7937)

Fluid Thioglycollate Medium is a general-purpose medium for the cultivation of anaerobes, microaerophiles and aerobes, and is recommended as one of the media for the sterility testing of biologics.

DESCRIPTION

Fluid Thioglycollate Medium conforms with specifications of The United States Pharmacopeia (USP).
Fluid Thioglycollate Medium (FTM) is used for the sterility testing of biologics and for the cultivation of anaerobes, aerobes and microaerophiles.
Fluid Thioglycollate Medium was designed by Brewer for rapid cultivation of anaerobes as well as aerobes. It was first made available in dehydrated form by the Baltimore Biological Laboratory (BBL) in 1940. Incorporation of casein peptone was introduced by Vera in 1944.2 This medium is capable of supporting good growth of a great variety of fastidious organisms, of both pathogenic and nonpathogenic species. A feature of sodium thioglycollate, in addition to lowering the oxidation-reduction potential, is its ability to neutralize the antibacterial activity of mercurial compounds. These characteristics make Fluid THIOGLYCOLLATE MEDIUM particularly useful for determining the presence of contamination in biological and other materials. The formula meets the requirements of the USP growth promotion test. Fluid Thioglycollate Medium may be used after its preparation until approximately 30% of the medium has been oxidized, as indicated by a pink color of the resazurin at the surface. If oxidation has proceeded further, the broth may be reheated once in steam or boiling water, cooled and used.

PRINCIPLE

Dextrose, peptone, L-cystine and yeast extract provide the growth factors necessary for bacterial replication. Sodium chloride provides essential ions. Sodium thioglycollate is a reducing agent that prevents the accumulation of peroxides which are lethal to some microorganisms. The L-cystine is also a reducing agent, since it contains sulfhydryl groups which inactivate heavy metal compounds and maintain a low redox potential, thereby supporting anaerobiosis. Resazurin is an oxidation-reduction indicator, being pink when oxidized and colorless when reduced. The small amount of agar assists in the maintenance of a low redox potential by stabilizing the medium against convection currents, thereby maintaining anaerobiosis in the lower depths of the medium.

COMPOSITION	g/L
Triptone	15,00
Estratto di lievito	5,00
Glucosio	5,50
Sodio cloruro	2,50
Tioglicolato di sodio	0,50
L-cistina	0,50
Resazurina	1 mg
Agar batteriologico	0,75 g

Final pH 7,1 ± 0,2 at 25°C

WARNING AND PRECAUTIONS

For in vitro diagnostic use.
Observe the precautions normally taken when handling laboratory reagents.
Dehydrated medium: HIGHLY HYGROSCOPIC. During the handling, wear dust protection mask. Avoid the eye contact. Do not use beyond the expiration date or if the product shows signs of deterioration, an altered color or has compacted.
Prepared Medium: The product does not contain hazardous substances in concentrations exceeding the limits set by current legislation and therefore is not classified as dangerous.
Safety Data Sheet is available on request for professional users.
All wast must be disposed of according to local directives.

STORAGE AND STABILITY	
Dehydrated medium:	10-30°C
Prepared medium:	10-25°C

The product is stable until the expiration date indicated on the label under the recommended storage conditions.
Regenerate the medium if a pink color is observed in more than 1/3 of the tube, measuring from the surface to the bottom. Restore anerobiosis by heating to 100 ° C every 10 minutes. Do not perform this operation more than once.

PREPARATION

Suspend 29.7 g of the powder in 1 liter of distilled or deionized water. Mix well. Heat to boil shaking frequently until completely dissolved. Distribute into appropriate final containers. Sterilize in autoclave at 121°C for 15 minutes.

PROCEDURE

Before use, loosen the caps and place the tubes in boiling water for approximately 5 min until the medium is reduced (colorless). Tighten caps immediately after removing from heat. Allow medium to cool to room temperature.
For general use, inoculate specimens directly into the medium and incubate tubes for up to 7 days at 35 ± 2 ° C.
For sterility testing, recommendations of the USP3 and various control agencies should be followed.

RESULTS

After incubation, growth is evidenced by the presence of turbidity compared to an uninoculated control. Strict aerobes tend to grow in a thin layer at the surface of the broth; obligate anaerobes will grow only in that portion of the broth below the upper oxidized (pink) layer. By carefully removing liquid from different levels, it is possible to enhance the ability to separate different species in a mixed culture.

QUALITY CONTROL

Dehydrated medium: Yellow colored, homogeneous, free flowing powder.
Prepared medium: Light straw colored, clear to very slightly opalescent solution with upper 10% or less medium pink on standing

Typical response after incubation at 35°C for 48-72 hours:

MICROORGANISM	GROWTH
Clostridium perfringens ATCC 13124	Good
Staphylococcus aureus ATCC 25953	Good
Bacteroides vulgatus ATCC 8482	Good
Bacillus subtilis ATCC 6633	Good
Candida albicans ATCC 10231	Good

REFERENCES

1. U.S. Pharmacopeia, (1985). 21st revision. United States Pharmacopeial Convention, Inc. Rockville, Maryland.
2. Official Methods of Analysis of the Association of Official Analytical Chemists, (1995) Cunniff, P., ed. 16th Edition. AOAC. Washington, D.C.
3. MacFaddin, J.F., (1985). Media for IsolationCultivation-Identification-Maintenance of Medical Bacteria. Vol. 1. Williams and Wilkins. Baltimore.
4. American Type Culture Collection, Manassas Va., U.S.A
5. ISO 7937 - 2005. Microbiology of food and animal feeding stuffs. Horizontal method for enumeration of Clostridium perfringen.s Colony count technique.

PRESENTATION	Packaging	REF.
Dehydrated medium		
Fluid THIOGLYCOLLATE MEDIUM (USP)		
	100 g (3,3 L)	**11180**
	500 g (16,8 L)	**10180**
Prepared medium		
Fluid THIOGLYCOLLATE MEDIUM (USP)		
	20 x 9 mL Tubes	**5127/20P**
	100 x 9 mL Tubes	**5127/A**

SYMBOLS

Read the instructions
Biological hazard
CE Mark (product complies with the requirements of Regulation (EU) 746/2017)
Temperature limitation
Use by
For in vitro diagnostic use
Manufacturer